



USER MANUAL

Model: HDSM V2.5

Horizon Digital Satellite Meter



Issue 2.5 – Sept 2006

Horizon Global Electronics Ltd
www.horizonhge.com



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Chapter 1

Getting Started

1) General Information & Safety

2) Accessories

3) Features

4) Using the Meter

5) Charging the Battery

6) Downloading from the Website

7) Transferring Files into your Meter.

8) Troubleshooting

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1) General Information & Safety

The HDSM is a compact, light weight and easy to use satellite installation meter featuring an easy to read display that show Signal strength and digital signal quality.

Finding your satellite is easy by using the left or right arrow keys to select your desired satellite and your HDSM will lock onto the satellite shown in the display.

Everything you need is supplied with your meter, which includes a mains charging lead, in-car charger and data lead. The rain cover and leather case are already fitted.

The HDSM can also be easily re-programmed from the Horizon Global Electronics website **www.horizonhge.com** with your choice of satellites or the default file for your region.

Spare battery packs are available directly from Horizon Global Electronics and can be replaced without voiding your warranty.

Replacement data leads, mains charging leads and in-car chargers are also available directly from Horizon Global Electronics.

The HDSM supports up to four different languages selectable from the setup menu.

The HDSM can also be programmed for special custom applications like VSAT installation, making it a very affordable solution.

Safety

Clean only with a dry cloth.

Always use the protective case and cover provided.

Read the instructions fully before operating your unit for the first time.

Care should be exercised when using the carry strap as it can present a choking hazard, only use when slipping or falling is not a possibility.

Do not disassemble your unit or interfere with the internal components; this will void your warranty and there is a possibility of electric shock.

Only use the provided battery, mains lead, DC car charger and computer programming lead as using other types may cause damage to your unit which will void your warranty or cause electric shock. Replacement battery packs are available directly from Horizon Global Electronics Ltd.

Should repair or service be required contact us directly at Horizon Global Electronics Ltd by calling us on **+44 (0)208 344 8230** or via our website **www.horizonhge.com**

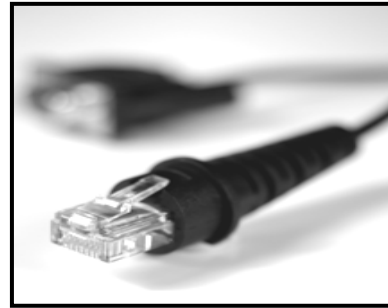
2) Accessories

Your HDSM is supplied with this Instruction Manual and these items below. Please check if you have all the following. If any items are missing please contact your supplier.

DC Car Charger Lead



Computer Programming Lead



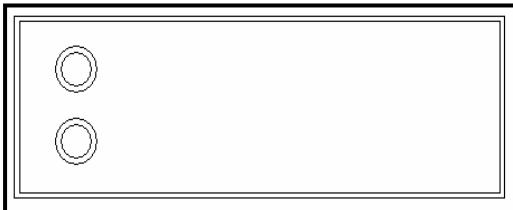
AC Mains Charger Lead



Leather Case



Rain Cover



Battery Pack



The mains lead should match your region, if your mains charger lead is not correct for your region one can be obtained from Horizon or a local supplier/ importer.

Note: The items shown above are subject to change without notice.

Please dispose of the packaging carefully and recycle where possible.

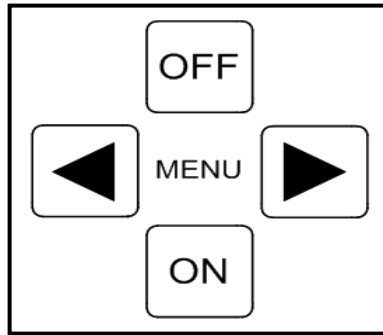
3) Features


Specifics:

- Signal Strength and BER displayed together
 - 32 Transponders or 16 Satellites, horizontal & vertical
 - Audible and visual tune-in, with display backlight
 - DVB, C & KU band, MPEG, VSAT compatible
 - Input dynamic range – 65dBm~25dBm
 - Input Connector F-female. Input imp 75ohms
 - Symbol Frequency rate from 1Msps~~45Msps
 - Universal Charger 100V~240V AC12 W. Intelligent charger (CE approved) with delta V delta T detection, Fast Charge then Trickle.
 - Run time with full charge, average 5 hours from 3.3Ah NiMH battery
 - Figure of 8 mains input connector. 2.1mm Female PSU plug for external charge via supplied car charger
 - LNB short circuit protection 500 mA automatic limiter
 - RF input range 950-2150MHz
 - Computer Interface: Serial Port (Com 1, 2, 3 or 4) for updating satellite settings
 - RF Level can be displayed in dBuV (accurate to +1dB) or linear scale (256 steps). Feature available in setup mode.
 - C/N (carrier to noise) is displayed in dB
 - Quality (pre BER or bit error rate) locks on faster making it easier to lock on to the satellite initially; typical lock in less than 100mS
 - Instead of “found” to indicate lock of correct satellites actual B.E.R can be displayed. Feature available in set up mode
-

4) Using the Meter

The HDSM Keypad



To turn the meter on press and hold the  button for 5 seconds

The first screen will flash indicating the Version Number, Satellite List Name and the Battery Strength in % terms.



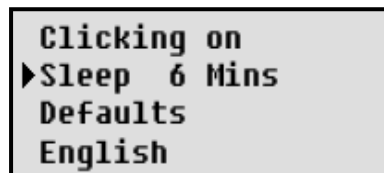
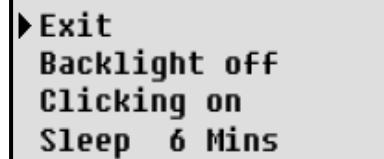
To select different satellites use the Left and Right cursor.



You can set your preferences by entering the **“Setup Mode”**. To access the menu shown below, make sure the meter is off then press and hold the **“OFF”** button for 5 seconds.

Functions in set up mode are:

1. Exit
2. Backlight On/Off
3. Clicking On/Off
4. Sleep
5. Defaults
6. Language: English, French, Dutch, Spanish
7. RF Linear or dBuV
8. Found or Numerical BER value
9. BER Log or Linear



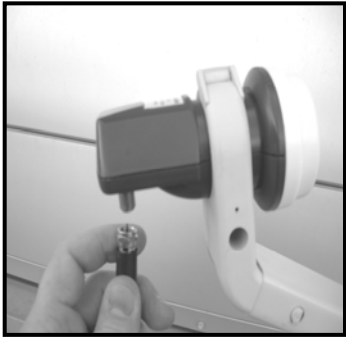
Please note points: 2, 3, 4, 5, 6, 7, 8, and 9 can all be changed to suit your preference, by pushing the left or right button on the keypad.


4) Using the Meter

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How to align your dish

- Once your dish mounting has been securely installed in a suitable direction connect the LNB to your HDSM meter with a short length of cable (1.5M or 4 feet being ideal) Tip: Your dish clamp should be just nipping the metal work allowing you to adjust the dish position, and it should hold when you release.




- Switch on your HDSM by pressing the button  for 5 seconds and select your desired satellite by using the left or right arrow key.



- Point the dish in the approximate direction of the required satellite, and slowly sweep the dish across the sky adjusting your elevation at the end of each sweep. Whilst you are sweeping the sky the rate of beeps will change as you pass each satellite; the scale on the meter will also change.
- Once you have located your satellite the HDSM will change tone and “Found” will be displayed on the screen.



- Peak up on your selected satellite by making fine azimuth and elevation adjustments to get the S and Q values as high as possible. You may wish to use the auto ranging function to recalibrate the displayed signal level to enable you to peak up with more accuracy by pressing the  button twice.



4) Using the Meter

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- Now adjust the polarisation of the LNB in fine steps clockwise and anticlockwise to get the pre BER (Q) bar to as high as value as possible. Flip between the Vertical and Horizontal polarities (where available) to ensure both values are as high as you can get them, and tighten the LNB clamp.



- Tighten up the dish fixings in an even manner to ensure a good fixing whilst keeping an eye on the display, which will enable you to make fine adjustments as you tighten.
- Installation Complete.

How to select DiSEqC Commands.

To switch to **DiSEqC** commands,
Press and hold the down button for 5 seconds to bring up the **DiSEqC menu**.

A screenshot of the DiSEqC menu. It lists four options: 'DiSEqC LNB A', 'DiSEqC LNB B', 'DiSEqC LNB C', and 'DiSEqC LNB D'. The first option, 'DiSEqC LNB A', is highlighted with a right-pointing arrow.

Press down or up to select the required switch and the right arrow to send

A screenshot of the DiSEqC menu. It lists four options: 'DiSEqC LNB A', 'DiSEqC LNB B', 'DiSEqC LNB C', and 'DiSEqC LNB D'. The second option, 'DiSEqC LNB B', is highlighted with a right-pointing arrow.

To turn your meter off, press and hold down the



button, till "Shutting Down" appears on the screen.

A screenshot of a screen displaying the text 'Shutting Down'.

5) Charging the Battery

The meter will **NOT** be fully charged when you receive it. We recommend you charge the meter for an initial **24 hours** before use. If your meter is not being used for a long period of time we recommend disconnecting the battery.

The battery pack is replaceable. To replace the batteries slide the meter out of its protective case open the cover on the bottom of the unit and disconnect the batteries. If the battery has been disconnected the meter will indicate flat battery (0%). You can also top up your battery from your vehicle with the DC Adapter supplied.

PLEASE NOTE: The meter will not operate whilst the unit is being charged.



Charging with the Mains Lead

Open the flap at the back of the HDSM leather case to access the mains inlet. Plug the mains lead into this port and the other end to your local supply socket.



Charging from a Vehicle.

The vehicle 12V DC charge port is on the right side of the unit. Plug the car charger lead into the bottom socket and the other end to the vehicle's "aux" socket. Please note that on certain vehicles the aux socket is switched off unless the vehicle is running. For in vehicle charging only use the lead supplied. The use of another lead may damage the meter and will void the warranty. The HDSM can remain connected to either power source in ***"Trickle Charge"*** state for an extended period of time without damaging any internal components or the battery pack.

6) Downloading from the Website

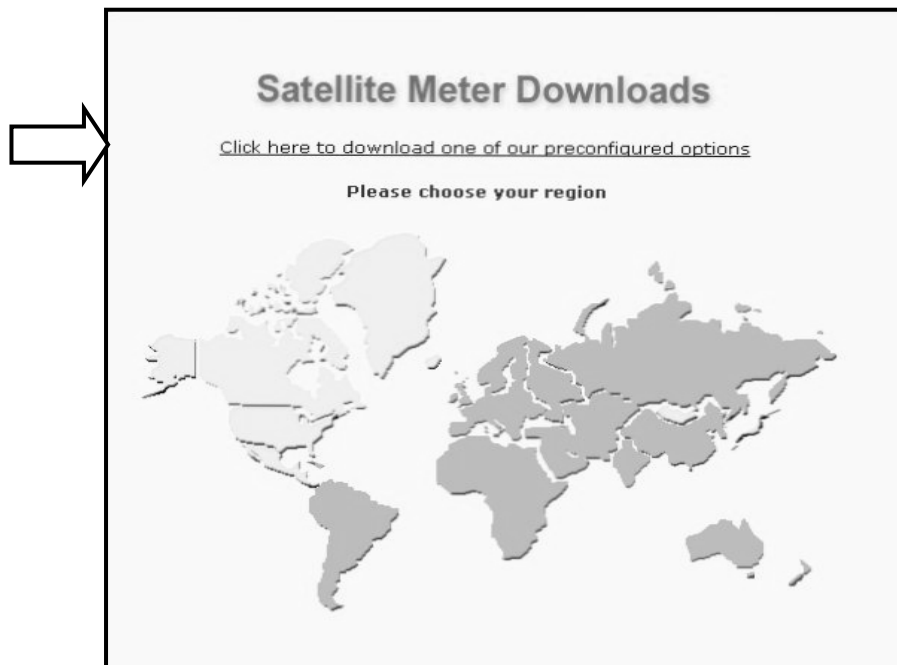
The HDSM meter is supplied with a standard UK Default File upon delivery. To customize the meter, go to our download page on our website **www.horizonhge.com** where you will find a list of available satellites ready for you to download.

To be able to update your satellite list you will require a PC with at least one 9 pin serial port and running a Windows operating system; you will also require access to the internet. A USB to Serial Interface adapter may also be used.(not supplied)

To change the satellite list in your HDSM, go to our website **www.horizonhge.com** and **DOWNLOAD** page. Then select **“Click for downloads for this product”**.



The following screen will appear; click on your required region and follow the instructions on the next page.



To download one of our preconfigured options, please click on the link shown by the arrow above, drag and drop your desired hex file into the satmeter loading program, or alternatively select your region from the map, for example; Europe and UK

6) Downloading from the Website


Continued from previous page

- Enter a selection name for the file, which will be on display when you turn on your meter.
- Enter your email address; this is where the file you create will be sent to

Selection name: <input type="text"/>	Email address: <input type="text"/>
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- Select your desired transponders by highlighting and clicking the satellite required to put it into your selected transponders list.

Available Transponders		Selected Transponders
<div>V Astra 28.2E High band H Astra 28.2E High band V Express AM22 53 East V PAS-12 45 East V Turksat 1C 42 East H Turksat 1C 42 East V Eurasiasat1 42 East H Eurasiasat1 42 East V Express AM1 40 East H Express AM1 40 East</div>	<div>↔ >> <<</div>	<div>V Astra 28.2E Low band H Astra 28.2E Low band</div>

- Once the selection is complete, click  and you will be sent an email.
- Collect the email in your inbox. The email will have an attachment, this is the actual loading program preloaded with your selection.

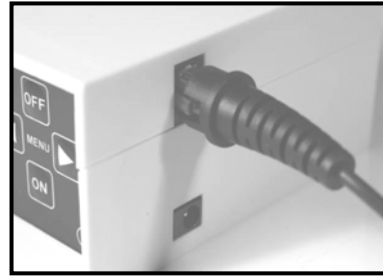


- Follow the instructions on the next page to upload the file into your meter.
- For the experienced user, as an option you can also download from the same page off the website.

Thankyou for using our meter. The transponder file [rad73203.zip] (ZIP format) has been emailed to you. You can download the file from [here](#). In case of difficulty please contact our customer support

7) Transferring Data into your Meter

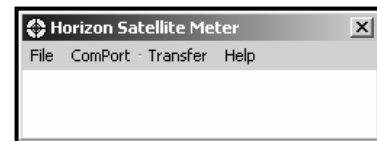
Make sure your Satellite Meter is switched off then connect the data lead to the Serial Port at the back/side of your PC/Laptop and the other end to your meter, as shown below;



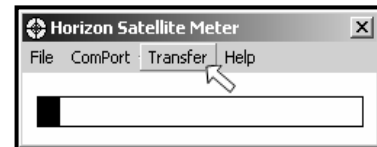
Wait for the meter to display

Program mode

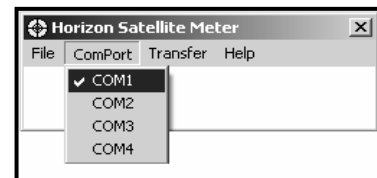
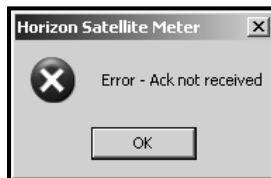
then click Transfer



After a few seconds a progress bar will appear



If you get this error message, check your COM-port selection, by selecting the correct COM number



When complete you will see a popup window that says: Click **“OK”** and close the program



Disconnect the meter from the computer, power it up and it will be ready for use.

8) Troubleshooting

All HDSM owners should be aware that the unit is location sensitive and will only pick up satellites within the downlink footprint of its programming.

Please ensure that you have the most up to date settings loaded into your HDSM meter these can be found in the downloads section of the Horizon Global Electronics Ltd website.

If the meter shows no signal level or indication of lock check the condition of your F-F lead for sound connections and that the length of cable is undamaged. If there are kinks in your cable or if there is any of the outer braid touching the centre core this will impact on your HDSM's performance.

I2C Error Indication

The I2C error detection firmware is embedded into all versions of Horizon Global Electronics Ltd meters; it is there in the event of a fault to protect the circuitry. The I2C error indicates that the internal electronics are not receiving correct communication with the internal tuner. This may be caused by very low battery power (typically in extremely cold weather conditions)

On the HDSM I2C errors can occur if there is a high current demand from the LNB or there are loose connections between the HDSM and the LNB (check the cable) or switching to a Horizontal selection with a very weak battery. In low temperature environments do not leave your unit in your vehicle overnight as this will also impact on the performance of your meter.

Storage

If you wish to store your unit for extended periods of time greater than 3 weeks disconnect the battery connectors. When required reconnect and charge overnight prior to use.

Tip: To keep your battery in good working order we recommend a full overnight charge at least once every two weeks for light usage. For every day usage we recommend to put your unit on overnight charge prior to the next working day to ensure maximum battery power is available.

For any additional help please don't hesitate to contact Horizon directly.

9) Notes

SPECIFICATION

Battery Pack	Ni-MH 3.3Ah
Intelligent Charger with delta V/T detection	Fast Charge (4 Hours), then trickle
Universal charger input range	100-240 V AC @0.3A
Battery life with full charge	More than 5 hours
Unit discharge time (idle State)	~24 days
LNB supply voltage	13V for V and 18V for H
LNB supply current	250 mA
LNB short circuit protection	automatically @ 500mA
RF input range	-65 dBm to 25 dBm
Number of satellite Stored in memory	32 Transponders (16 Satellites)
Computer Interface	Serial via RS232

LIMITED WARRANTY

Horizon will, at our option, repair or replace any HORIZON Digital Satellite Meter found defective in manufacture within the warranty period (1 year).

The warranty period is determined by the date of HDSM purchase. Keep your receipt as proof of purchase. Otherwise the warranty is determined by date of manufacture.

This warranty does not apply to damage caused by accident, misuse, or tampering with the unit or seals. This does not affect your statutory rights.

DECLARATION OF CONFORMITY

Manufacture: Horizon Global Electronics Ltd

Address: Unit 1, 8 Kinetic Crescent, London Office & Science Park, Enfield EN3 7XH

Declares that the (Horizon Digital Satellite Meter ("HDSM V2.5) is in conformity with the following Directives and standards.

Low Voltage: 73/23/EEC 93/68/EEC EMC: 89/336/EEC 92/31/EEC
93/68/EEC

Technical Department
Horizon Global Electronics
London 1st October 2001



www.horizonhge.com

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